



AirTrojan
WATER COOLED CHILLER

[Your satisfaction is always our cherished desire!]



AirTrojan International Co., Ltd.

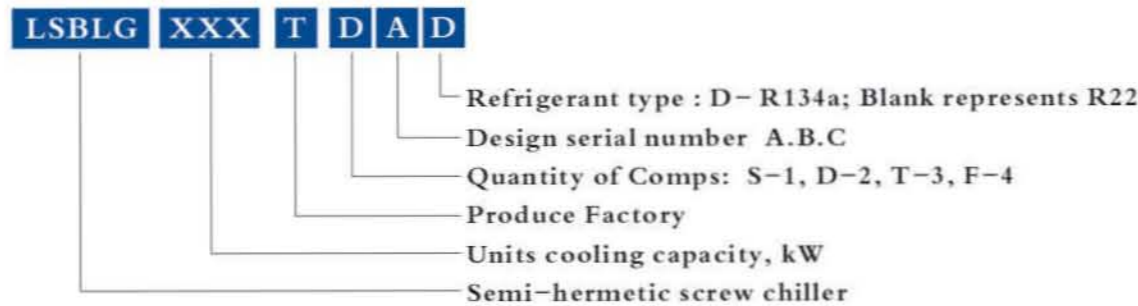
<http://www.airtrojan.com>



The models and specifications of equipment listed in this catalog shall be subject to change without any prior notification due to product updating.



Descriptions of Model number



Product Features

- World famous compressor
- High efficiency ratio
- Long life-span
- Reliable optional accessory
- Microcomputer controller with complete function
- Large screen touch operating interface
- Automatic resume function
- Remote monitoring
- Appropriate product application scopes
- Low operating noise
- Solid construction
- Intelligent motor protective devices
- Automatic fault diagnose and alarm function
- Perfect protection devices

Microcomputer controller

- Advanced high-speed built-in microprocessor is employed, and its performance is much better than single-chip computers in the industry.
 - Surface Mounting Technique (SMT) is employed for the main board, with a compact structure, low heat generation, and good anti-interference capability.
 - A serial port is reserved for the main board to directly download programs from PC quickly, thus facilitating program upgrading and hardware expansion.
 - 485 communication transmission technology is employed, with a long data transmission distance up to 1200 m without signal attenuation. If a relay is added, the communication distance can go beyond 3000 m.
 - A quick operation guide is provided for the user's reference.
 - The actual temperatures of various points can be consulted. Switching input and relay output can be acquired. The temperature can be modified and set. The temperature curve for one hour and one day can be displayed.
 - Current and history faults can be acquired. With fault statistics function, the unstable part of the equipment can be analyzed to improve the product. History faults can be acquired by three methods, namely, by checking fault signal, fault times and fault occurrence time.
 - Remote control startup and shutdown can be achieved. One-time timed startup and shutdown, and weekly timed startup and shutdown. Up to three times of timed startup and shutdown per day can be achieved.
- Varied picture display, users can choose their favorite picture display for setting.
Online multilingual switchover is supported.

A full product range, tailor-made is available

Based on the advanced models and combined with other models, AirTrojan provides a full product range from 132 kW to 1744 kW. Depending on the foundation of its strong R&D abilities, AirTrojan is able to customize non-standard products for customers, thus promote its own technical system.

Display functions:

- Inlet and outlet cooling water temperature
- Inlet and outlet chilled water temperature
- Power voltage
- Compressor operation current
- Evaporating pressure and condensing pressure
- Chilled water flow
- Current time display (year/month/day/hour/minute)
- Compressor operation time
- Setting values of operating current
- Setting values of inlet and outlet water temperatures
- Setting values of evaporative pressure and condensing pressure
- Setting value of water flow
- Compressor operating status
- Alarm switches' statuses
- Set load capacity
- Air exhaust temperature

Control functions:

- Everyday operation setting
- Holiday operation setting
- Current time setting
- Inlet and outlet water temperature setting
- Operating current setting
- Automatic restore to the default setting
- Loading and unloading with non-stage and stage regulation
- Automatic unloading when operating current is overload
- Delay setting for various alarms
- Temperature sensor rectification
- Current sensor rectification
- Automatic restore of machine
- Automatic switch of the start sequence of compressors
- Control input voltage of machine
- Delay of repeated start of compressors
- Stop due to power interruption
- Limit control of high and low water temperature
- Rectification of pressure and water flow sensors
- Whether to use a password for the system
- Automatic diagnosis for computer circuits
- Failure stop
- Automatic heating chiller oil during stop



Compressor

Security alarm functions:

- Over-low alarms for evaporative pressure
- Over-high alarms for condensing pressure
- Over-low alarms for inlet and outlet cooling water temperatures
- Over-high alarms for outlet water temperature
- Compressors overload alarm
- Compressors internal over-heat alarm
- Over-high oil temperature alarm
- Anti-frozen switch action alarm
- Phase fault and phrase-reverse alarm
- Over-voltage and under-voltage alarms
- Over-low oil level alarm
- Cooling water pump overload alarm
- Chilled water pump overload alarm
- Cooling tower fan overload alarm
- Exhaust air over-temperature alarm
- Insufficient cooling water flow alarm
- Insufficient chilled water flow alarm

Note: "■" indicates optional function, while others are standard functions for microcomputer controller.



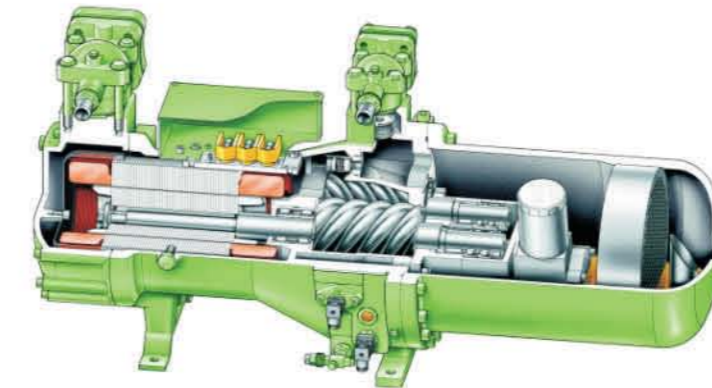
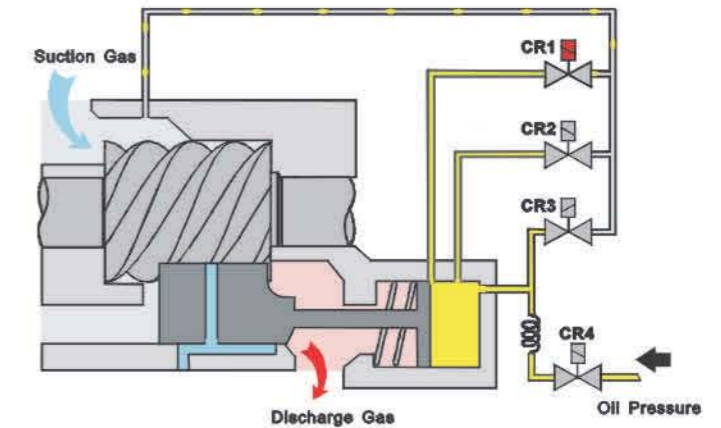
- High efficient linear design
Further geometric design shape
High hardness
High edge line speed
Patent machining process
- Slide valve with completed economizer joint
Realizable non-stage and stage energy regulation
The sucking position of economizer can be adjusted in accordance with the slide valve.
Partial load efficiency is high

Condenser and Evaporator

Each unit adopts high efficient horizontal shell-tube heat exchangers, and all heat exchangers are with "BR1" class National Pressure Vessel Manufacture Permission. All products are manufactured with quality-imported pipes, plates and threaded copper tubes, through digital control machine and full automatic welding device processing. The products pass the pressure test, and were examined and qualified by National Pressure Vessel Examination Organization. Thread copper tube can greatly increase the heat exchange efficiency between the refrigerant and water. The structure of the system flow is simple, and the heat exchange is stable, easy to maintain. The advantages include artistic appearances, compact size, high heat exchange, and low failure rate etc. All heat exchangers are complies with GB150 Steel Pressure Vessel, GB151 Shell and Tube Heat Exchangers, JB/T4750-2003 Pressure Vessels for cooling Devices, and other related national laws and regulations.



- Optimized oil circuit design:
Three-level oil separator
Long life-span oil filter
Low pressure bearing chamber
- Four energy adjusting solenoid valves can satisfy:
25%-50%-75%-100% Four-level energy adjustment
25%--100% non-stage energy adjustment



- Patent dual-lay shell with steady pressure compensation, it can greatly reduce noise. Even under high pressure, the shell won't expand.
- Reliable low pressure bearing chamber, long life-span bearing
Double way bearing, firmness and durable.
Sealed ring isolate the bearing chamber and the high pressure to reduce bearing pressure.
- Perfect standard fittings
Oil heater
Internal discharge pressure valve
Air exhaust single way valve
Air exhaust check valve



Twin-screw single unit series(R-134a)(Bitzer compressor)

Item	Mode	LSBLG 85TSAD	LSBLG 105TSAD	LSBLG 124TSAD	LSBLG 147TSAD	LSBLG 163TSAD	LSBLG 194TSAD	LSBLG 215TSAD	LSBLG 205TSAD	
Power supply	-	3PH-380V-50Hz								
Cooling capacity	kcal/h	73,100	90,300	106,600	126,400	140,200	166,800	184,900	176,300	
	kW	85	105	124	147	163	194	215	205	
Power consumption	kW	19	24	30	32	37	42	48	44	
Operating current	A	37	43	52	59	65	74	81	71	
Starting current	A	153D/305DD	169D/338DD	206D/355DD	267D/449DD	290D/485DD	350D/585DD	423D/686DD	394D/606DD	
Compressor	Capacity control	110-75-50-25-0								
	Type	Semi-hermetic twin screw								
	Quantity	1								
	Starting method	Part Winding								
	Oil heater	W	200							300
Cooling oil	Type	BSE170								
	Charge volume	L	9.5	15						22
Refrigerant	Type	R-134a								
	Charge volume	kg	21	26	31	37	41	49	54	51
	Control method	Thermal Expansion Valve								
Evaporator	Type	High efficient shell and tube heat exchanger								
	Chilled water flow	m ³ /h	15	18	21	25	28	33	37	35
	Pressure loss	kPa	51	51	54	54	54	57	59	57
	Pipe size	-	2-1/2"	2-1/2"	3"	3"	3"	3"	4"	3"
Condenser	Type	High efficient shell and tube heat exchanger								
	Cooling water flow	m ³ /h	19	24	28	33	36	43	48	46
	Pressure loss	kPa	45	45	49	49	49	51	51	54
	Pipe size	-	2"	2"	2-1/2"	2-1/2"	2-1/2"	3"	3"	3"
Protective devices	-	High and low voltage switches, anti-freezing switch, fusible plug, compressor overload protection, motor over-high temperature protection, air exhaust over-temperature protection, pump over-heat protection, oil over-temperature protection, reverse and default phase protection, over/under-voltage protection, cooling water over-temperature protection, insufficient chilled water flow protection, insufficient cooling water flow protection, and cooling tower overload protection.								
Outline dimensions	L	mm	2175	2195	2245	2245	2245	2860	2900	2975
	W	mm	935	935	935	935	935	1015	1015	1015
	H	mm	1430	1500	1655	1655	1655	1710	1710	1965
	A	mm	1100	1100	1100	1100	1100	1200	1200	1300
	B	mm	690	690	690	690	690	790	790	790
	C	mm	690	760	820	820	820	860	860	1000
	D	mm	170	190	240	240	240	240	240	270
	E	mm	100	100	120	120	120	120	120	160
	F	mm	75	80	80	80	80	125	125	100
	G	mm	240	240	230	230	230	475	475	400
I	mm	75	145	170	170	170	200	200	315	
Net weight	kg	1020	1060	1270	1320	1370	1400	1440	1580	
Operation weight	kg	1120	1180	1420	1485	1550	1580	1630	1785	
Operation noise	dB(A)	72	72	74	74	74	76	76	78	

Note:
 1. Parameter testing conditions: chilled water inlet temp 12°C, outlet temp 7°C, cooled water inlet temp 30°C outlet temp 35°C, condition test: fouling factor 0.0001 m² °C/W.
 2. If you have any special requirement, please inform us before placing order.
 3. Specifications are subject to change without notice for further improvement.

Twin-screw single unit series(R-134a)(Bitzer compressor)

Item	Mode	LSBLG 233TSAD	LSBLG 272TSAD	LSBLG 307TSAD	LSBLG 352TSAD	LSBLG 404TSAD	LSBLG 469TSAD	LSBLG 526TSAD	LSBLG 598TSAD	
Power supply	-	3PH-380V-50Hz								
Cooling capacity	kcal/h	200,400	233,900	264,000	302,700	347,400	403,300	452,400	514,300	
	kW	233	272	307	352	404	469	526	598	
Power consumption	kW	51	58	66	72	86	99	122	123	
Operating current	A	84	102	116	127	145	162	192	208	
Starting current	A	439D/675DD	520D/801DD	612D/943DD	685D/1023DD	436Y/1364D	465Y/1442D	586Y/1853D	650Y/2029D	
Compressor	Capacity control	100-75-50-25-0								
	Type	Semi-hermetic twin screw								
	Quantity	1								
	Starting method	Part Winding								
	Oil heater	W	300							Y-Δ
Cooling oil	Type	BSE170								
	Charge volume	L	22	19				35		
Refrigerant	Type	R-134a								
	Charge volume	kg	58	68	77	88	101	117	132	150
	Control method	Thermal Expansion Valve								
Evaporator	Type	High efficient shell and tube heat exchanger								
	Chilled water flow	m ³ /h	40	47	53	61	70	81	91	103
	Pressure loss	kPa	59	59	62	62	67	67	69	69
	Pipe size	-	4"	4"	4"	4"	5"	5"	5"	5"
Condenser	Type	High efficient shell and tube heat exchanger								
	Cooling water flow	m ³ /h	52	61	69	79	90	105	118	134
	Pressure loss	kPa	54	54	57	57	59	59	62	62
	Pipe size	-	3"	3"	4"	4"	4"	5"	5"	5"
Protective devices	-	High and low voltage switches, anti-freezing switch, fusible plug, compressor overload protection, motor over-high temperature protection, air exhaust over-temperature protection, pump over-heat protection, oil over-temperature protection, reverse and default phase protection, over/under-voltage protection, cooling water over-temperature protection, insufficient chilled water flow protection, insufficient cooling water flow protection, and cooling tower overload protection.								
Outline dimensions	L	mm	2985	2985	3010	3010	3510	3590	3595	3595
	W	mm	1025	1025	1055	1055	1105	1105	1175	1175
	H	mm	1975	1975	1990	1990	2140	2155	2195	2195
	A	mm	1300	1300	1300	1300	1600	1600	1600	1600
	B	mm	790	790	790	790	900	900	980	980
	C	mm	1010	1010	1010	1010	1120	1120	1160	1160
	D	mm	270	270	245	245	275	240	240	240
	E	mm	160	160	175	175	175	240	240	240
	F	mm	100	100	100	100	125	130	175	175
	G	mm	405	405	405	405	550	540	540	540
I	mm	310	310	245	245	250	340	340	340	
Net weight	kg	1720	1870	1980	2070	2430	2790	2910	3240	
Operation weight	kg	1940	2100	2220	2340	2730	3120	3240	3760	
Operation noise	dB(A)	78	78	80	80	82	82	84	84	

Note:
 1. Parameter testing conditions: chilled water inlet temp 12°C, outlet temp 7°C, cooled water inlet temp 30°C outlet temp 35°C, condition test: fouling factor 0.0001 m² °C/W.
 2. If you have any special requirement, please inform us before placing order.
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Twin-screw double unit series(R-134a)(Bitzer compressor)

Item	Mode	LSBLG 170TDAD	LSBLG 211TDAD	LSBLG 248TDAD	LSBLG 293TDAD	LSBLG 326TDAD	LSBLG 388TDAD	LSBLG 430TDAD	LSBLG 410TDAD	
Power supply	-	3PH-380V-50Hz								
Cooling capacity	kcal/h	146,200	181,500	213,300	252,000	280,400	333,700	369,800	352,600	
	kW	170	211	248	293	326	388	430	410	
Power consumption	kW	39	48	59	65	73	83	96	88	
Operating current	A	73	86	105	117	131	147	163	142	
Starting current	A	153D/305DD	169D/338DD	206D/355DD	267D/449DD	290D/485DD	350D/585DD	423D/686DD	394D/606DD	
Compressor	Capacity control	100-75-50-25-0								
	Type	Semi-hermetic twin screw								
	Quantity	2								
	Starting method	Partial winding								
	Oil heater	W	200 x 2						300 x 2	
Cooling oil	Type	BSE170								
	Charge volume	L	9.5 x 2		15 x 2				22 x 2	
Refrigerant	Type	R-134a								
	Charge volume	kg	21 x 2	26 x 2	31 x 2	37 x 2	41 x 2	49 x 2	54 x 2	51 x 2
	Control method	Thermal Expansion Valve								
Evaporator	Type	High efficient shell and tube heat exchanger								
	Chilled water flow	m³/h	29	36	43	50	56	67	74	71
	Pressure loss	kPa	54	54	57	57	57	59	59	62
	Pipe size	-	3"	3"	4"	4"	4"	4"	5"	5"
Condenser	Type	High efficient shell and tube heat exchanger r								
	Cooling water flow	m³/h	38	47	56	66	73	87	96	92
	Pressure loss	kPa	45	45	49	49	49	51	51	54
	Pipe size	-	2" x 2	2" x 2	2-1/2" x 2	2-1/2" x 2	2-1/2" x 2	3" x 2	3" x 2	3" x 2
Protective devices	-	High and low voltage switches, anti-freezing switch, fusible plug, compressor overload protection, motor over-heat protection, air exhaust over-temperature protection, pump over-heat protection, oil over-temperature protection, reverse and default phase protection, over/under-voltage protection, cooling water over-temperature protection, insufficient chilled water flow protection, insufficient cooling water flow protection, and cooling tower overload protection.								
Outline dimensions	L	mm	3060	3060	3175	3175	3175	3180	3200	3180
	W	mm	1150	1150	1250	1250	1250	1250	1250	1250
	H	mm	1525	1525	1805	1805	1805	1830	1850	1830
	A	mm	1300	1300	1300	1300	1300	1600	1600	1600
	B	mm	1040	1040	1140	1140	1140	1140	1140	1140
	C	mm	770	770	955	955	955	975	975	975
	D	mm	215	215	275	275	275	270	270	270
	E	mm	100	100	120	120	120	120	120	120
	F	mm	230	230	275	275	275	275	275	275
	G	mm	410	410	400	400	400	250	250	250
I	mm	70	70	90	90	90	225	225	225	
Net weight	kg	1760	1790	2340	2420	2500	2580	2660	3580	
Operation weight	kg	1920	1970	2520	2620	2710	2800	2890	3920	
Operation noise	dB(A)	74	74	76	76	76	78	78	80	

Note:
 1 Parameter testing conditions: chilled water inlet temp 12°C, outlet temp 7°C; cooled water inlet temp 30°C, outlet temp 35°C, condition test: fouling factor 0.0001 m²°C/W
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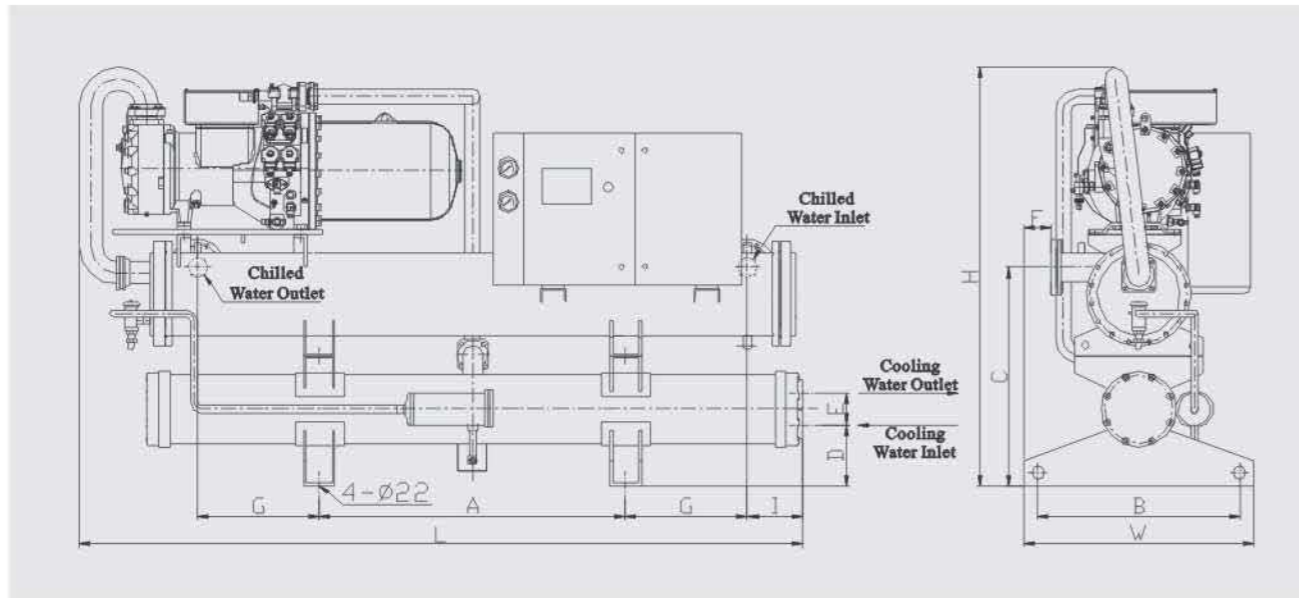
Twin-screw double unit series(R-134a)(Bitzer compressor)

Item	Mode	LSBLG 467TDAD	LSBLG 544TDAD	LSBLG 613TDAD	LSBLG 704TDAD	LSBLG 809TDAD	LSBLG 938TDAD	LSBLG 1051TDAD	LSBLG 1196TDAD	
Power supply	-	3PH-380V-50Hz								
Cooling capacity	kcal/h	401,600	467,800	527,200	605,400	695,700	806,700	903,900	1,028,600	
	kW	467	544	613	704	809	938	1051	1196	
Power consumption	kW	101	116	131	144	172	197	245	246	
Operating current	A	168	203	232	254	290	323	384	416	
Starting current	A	439D/675DD	520D/801DD	612D/843DD	665D/1023DD	436Y/1364D	465Y/1442D	586Y/1853D	650Y/2029D	
Compressor	Capacity control	100-75-50-25-0								
	Type	Semi-hermetic twin screw								
	Quantity	2								
	Starting method	Part Winding				Y-Δ				
	Oil heater	W	300 x 2							
Cooling oil	Type	BSE170								
	Charge volume	L	22 x 2		19 x 2			35 x 2		
Refrigerant	Type	R-134a								
	Charge volume	kg	58 x 2	68 x 2	77 x 2	88 x 2	101 x 2	117 x 2	132 x 2	150 x 2
	Control method	Thermal Expansion Valve								
Evaporator	Type	High efficient shell and tube heat exchanger								
	Chilled water flow	m³/h	80	94	106	121	139	162	181	206
	Pressure loss	kPa	62	62	67	67	69	69	72	72
	Pipe size	-	5"	5"	6"	6"	6"	6"	8"	8"
Condenser	Type	High efficient shell and tube heat exchanger								
	Cooling water flow	m³/h	105	122	137	158	181	210	235	268
	Pressure loss	kPa	54	54	57	57	59	59	62	62
	Pipe size	-	3" x 2	4" x 2	4" x 2	4" x 2	5" x 2	5" x 2	5" x 2	5" x 2
Protective devices	-	High and low voltage switches, anti-freezing switch, fusible plug, compressor overload protection, motor over-heat protection, air exhaust over-temperature protection, pump over-heat protection, oil over-temperature protection, reverse and default phase protection, over/under-voltage protection, cooling water over-temperature protection, insufficient chilled water flow protection, insufficient cooling water flow protection, and cooling tower overload protection.								
Outline dimensions	L	mm	3180	3820	3830	3830	4330	4330	4400	4400
	W	mm	1250	1400	1400	1400	1600	1600	1750	1750
	H	mm	1830	2080	2125	2130	2300	2330	2365	2365
	A	mm	1600	1600	1600	1600	1600	1600	1600	1600
	B	mm	1140	1290	1290	1290	1480	1480	1630	1630
	C	mm	975	1085	1130	1135	1240	1240	1270	1305
	D	mm	270	265	285	265	300	300	290	290
	E	mm	120	160	160	175	175	175	240	240
	F	mm	275	330	325	325	405	405	450	430
	G	mm	250	540	540	540	750	750	750	750
I	mm	225	25	25	25	50	50	130	130	
Net weight	kg	3750	3880	4020	4170	5050	5340	5600	5870	
Operation weight	kg	4110	4250	4400	4560	5490	5830	6260	6600	
Operation noise	dB(A)	80	80	82	82	84	84	86	86	

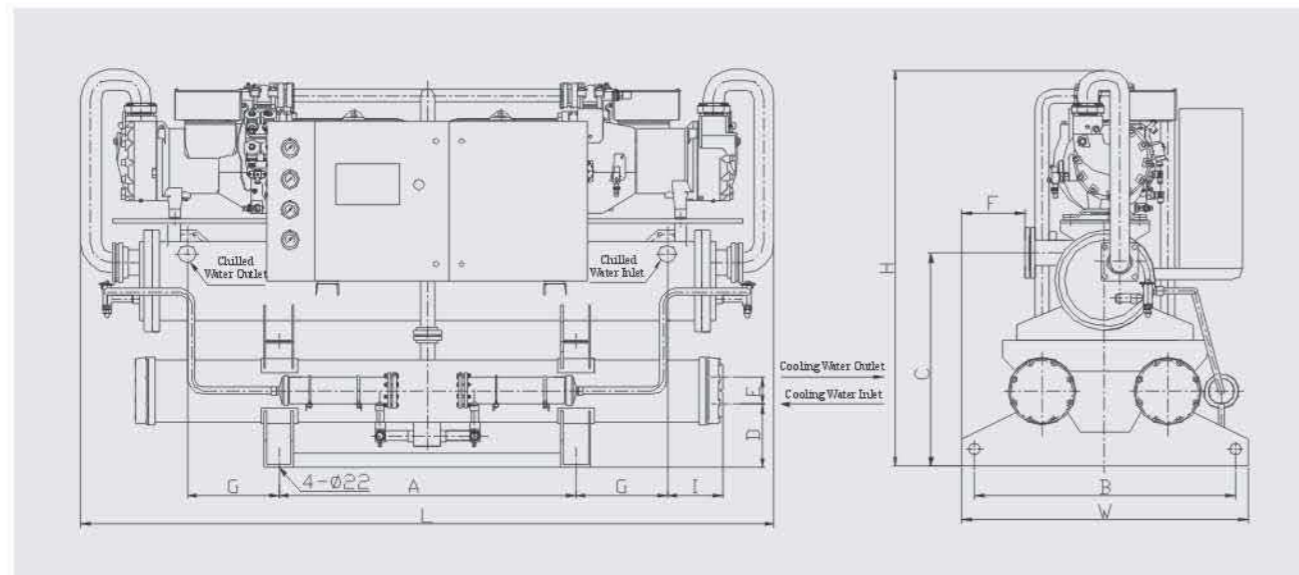
Note:
 1 Parameter testing conditions: chilled water inlet temp 12°C, outlet temp 7°C; cooled water inlet temp 30°C, outlet temp 35°C, condition test: fouling factor 0.0001 m²°C/W
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Twin-screw single unit series (R-22、R-134a) (Bitzer compressor)



Twin-screw double unit series (R-22、R-134a) (Bitzer compressor)



Twin-screw single/double unit series (R-22) (Hanbell/Fusheng compressors)

Mode		LSBLG 400TSB	LSBLG 470TSB	LSBLG 475TDB	
Power supply	-	3Φ-380V-50Hz			
Cooling capacity	kcal/h	344,000	404,800	408,500	
	kW	400	470	475	
Power consumption	kW	82	94	111.8	
Operating current	A	137	170	112	
Starting current	A	343	425	383	
Compressor	Capacity control	100、75、50、25、0			
	Type	Semi-hermetic screw type		Semi-hermetic twin screw type	
	Quantity	1		2	
Cooling oil	Starting method	Y-Δ			
	Oil heater	W	200	200 × 2	
	Type	SUNISO 5GS, CP-4214-320			
	Charge volume	L	15	14 × 2	
Refrigerant	Type	R-22			
	Charge volume	kg	62	39 × 2	
	Control method	Thermal Expansion Valve			
Evaporator	Type	High efficient shell and tube heat exchanger			
	Chilled water flow	m ³ /h	69	81	82
	Pressure loss	kPa	59	59	62
	Pipe size	-	5"	5"	5"
Condenser	Type	High efficient shell and tube heat exchanger			
	Cooling water flow	m ³ /h	83	97	106
	Pressure loss	kPa	57	57	54
	Pipe size	-	4"	5"	3" × 2
Protective devices	-	High and low voltage switches, anti-freezing switch, fusible plug, compressor overload protection, motor over-high temperature protection, exhaust over-temperature protection, pump overheat protection, oil over-temperature protection, reverse and default phase protection, over/under-voltage protection, cooling water over-temperature protection, insufficient chilled water flow protection, insufficient cooling water flow protection, and cooling tower overload protection.			
Outline dimensions	L	mm	3100	3100	3150
	W	mm	1010	1135	1250
	H	mm	1540	1600	1800
	M	mm	760	910	840
	O	mm	0	0	240
	A	mm	140	330	355
	B	mm	415	427	820
C	mm	160	210	125	
D	mm	415	412	210	
E	mm	2470	2470	2500	
Net weight	kg	2000	2200	2420	
Operation weight	kg	2250	2500	2620	
Operation noise	dB(A)	78	80	76	

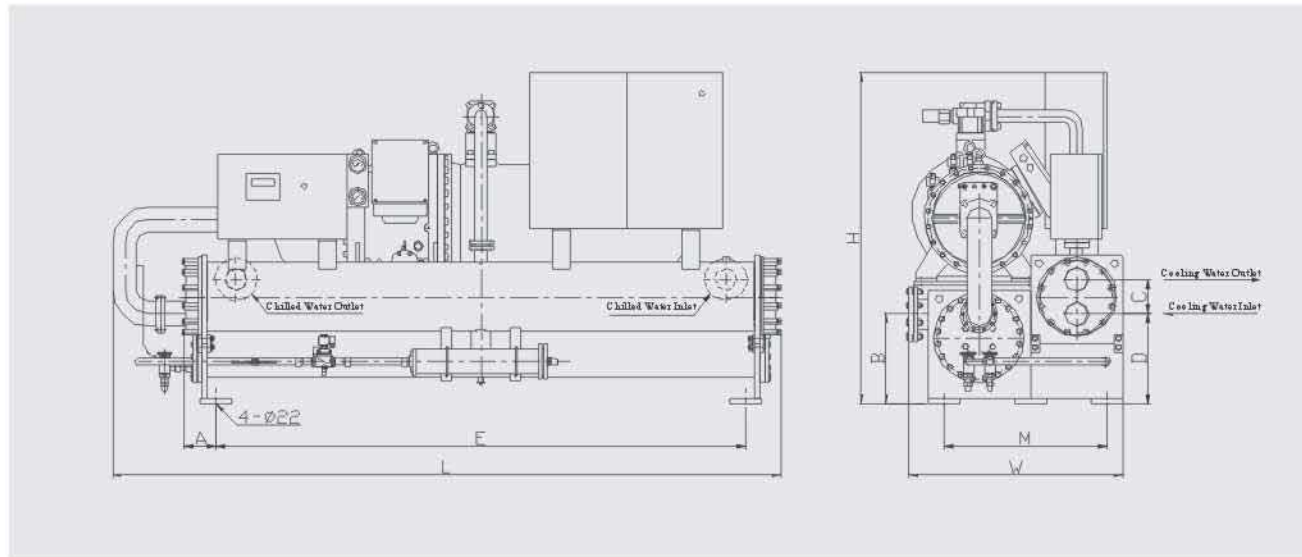
Note:

1. Parameter testing conditions: chilled water inlet temp 12°C, outlet temp 7°C; cooled water inlet temp 30°C, outlet temp 35°C; condition test: fouling factor α 0.0001 m²°C/W.
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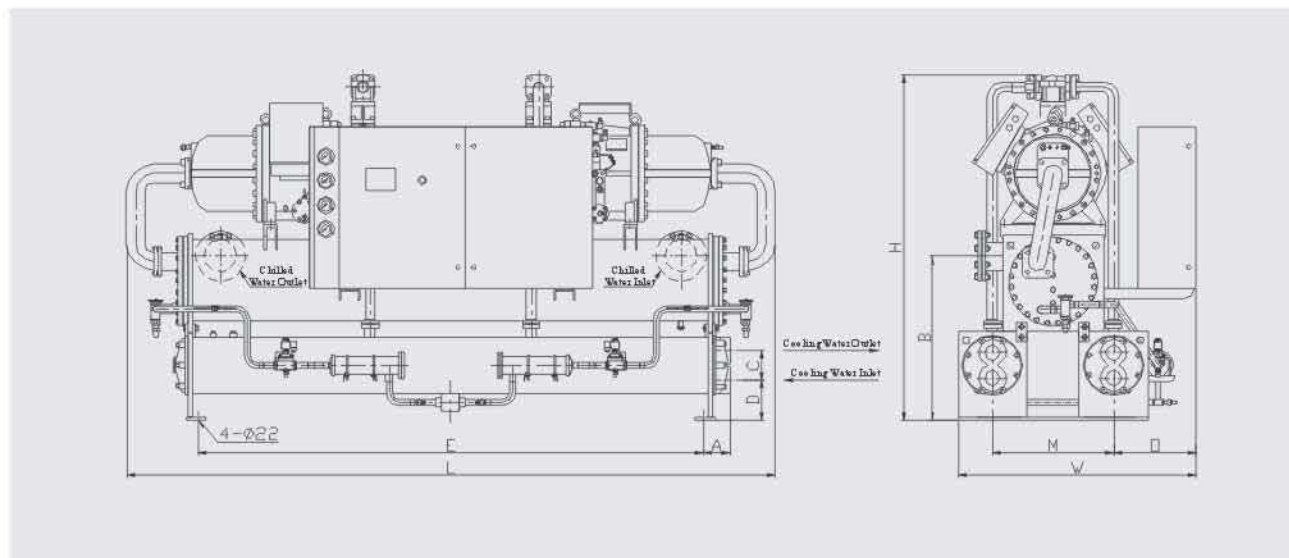


Installation

Twin-screw single (R-22) (Hanbell/Fusheng compressors)



Twin-double unit series (R-22) (Hanbell/Fusheng compressors)



The piping of water system

- 1)The water inlet and outlet pipes of the machine and the valves shall have good heat preservation, avoiding the cooling loss and condensation.
- 2)To ensure enough water supply in the evaporator and condenser and pipe system, the water flow switch shall be installed on the water outlet side of the evaporator and condenser and shall be in interlock control with the compressor. Thus it can avoid the inner frozen, too low pressure, bad oil return due to water lack or high pressure protection due to too high condensation pressure.
- 3)Multiple heat exchangers and water cooled chillers are in parallel connection. To keep the water flow of each heat exchanger the same, the resistance in pipes between the chillers and heat exchangers shall be equal.
- 4)In case of hermetic loop type water system, to reduce the expansion or contraction of water volume and to avoid the influence on water pipes by compensation water pressure, expansion water tank shall be equipped at water return position. The water surface of the expansion water tank shall be at least one meter higher than the highest point of the water system pipe.
- 5)The chilled water pump shall be installed at the inlet side of evaporator.
- 6)To avoid air staying in the water system, auto air discharge valves shall be installed at the high points of water pipes. And the water pipe in transverse direction shall be constructed at the upward slope of 1/250 degree. Rust shall be removed before water pipes are fixed. And the pipes shall be free of slag and be kept clean before the machine is put into operation.
- 7)Water pipe outlet shall have shockproof hose to avoid the vibration of the machine transmitted into the room.
- 8)Thermometer and pressure gauge shall be installed at water outlet/inlet of the machine, for easy maintenance and daily check.
- 9)When the water cooled chiller is running, the water flow or the nonfreezing solution flow inside the evaporator shall be above the minimum.
- 10)Pipe connection base for piping accessory shall be set at the water in/out pipes, for the easy water pipe separation in case of check and repair is needed.
- 11)The weight of water pipes shall not be borne by the machine. The water outlet/inlet of water pump shall be connected with related water pipes through the shockproof water pipes or rubber connector, to avoid the transmission of vibration and noise and interference.
- 12)The condenser and cooling water pipes are recommended to be installed as shown in Figure 1.

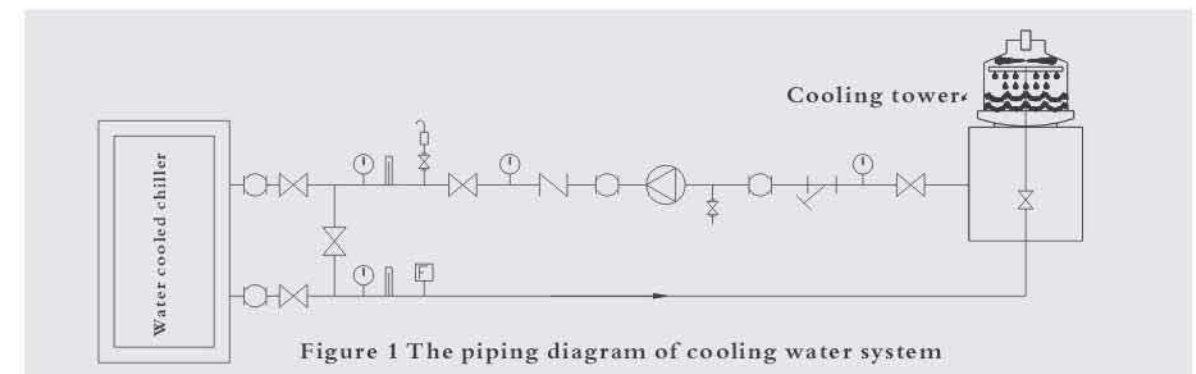
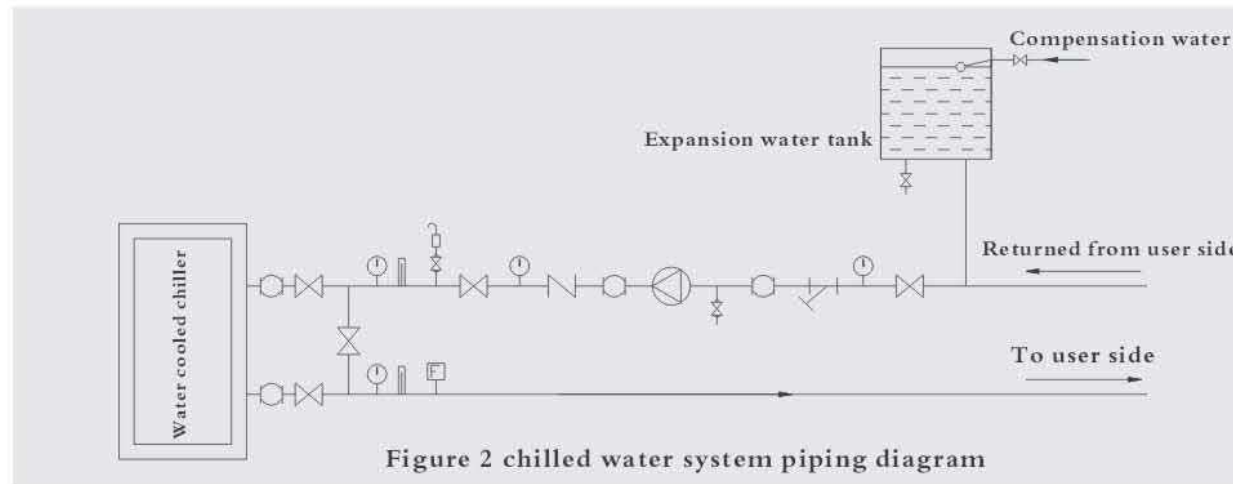


Figure 1 The piping diagram of cooling water system



13. The evaporator and chilled water pipes are recommended to be installed as shown in Figure 2.

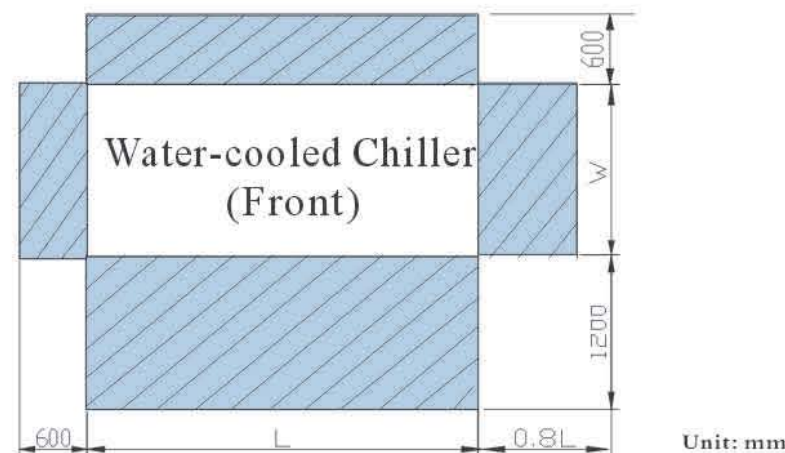


- | | | |
|----------------------|--------------------------|----------------------|
| Water filter | Pressure gauge | Water drain valve |
| Stop valve | Thermometer | Water flow switch |
| Shockproof connector | Auto air discharge valve | Water flow direction |
| Water pump | Check valve | |

Hoisting and foundation installation

How to select installation place

- Choose the ground which can bear the weight of the machine under operating condition. The ground shall be solid enough, and not to generate the resonance and noise easily.
- Keep the machine away from rain, wind blowing, direct sunlight or other heat sources.
- The ambient temperature shall be controlled within 040? and the relative humidity within 75%.
- The location is well ventilated and has less dust.
- Near power supply and convenient for construction.
- Easy for maintenance and check. Preserve the service space as shown in the figure below. In the figure, L indicates the length of machine. Please refer to water cooled chiller catalogue. For the cleaning space of 0.8L for the condenser, please consider one among left or right side.



Foundation platform

- The cement foundation platform shall be constructed by referring to the machine weight under operating condition. Place on the bamboo steel with at least 9.5cm diameter (#3), and pack at the interval of 10 cm and totally in two layers.
- When cement foundation platform is constructed on concrete floor, the floor surface shall be made coarse. After cleaning the floor, water it and then start to construct.
- The cement foundation platform uses the concrete at the proportion of 1:2:4. Bury anchor bolts according to related requirements. The foundation platform surface shall be polished and kept horizontal.
- After the concrete of the foundation platform dries completely, the machine can be installed on it.
- Good drainage shall be ensured around the foundation platform. No accumulated water or other conditions which will affect the environment around the machine.

Refer to water cooled chiller catalogue for A, B (E, M) in the figure below.

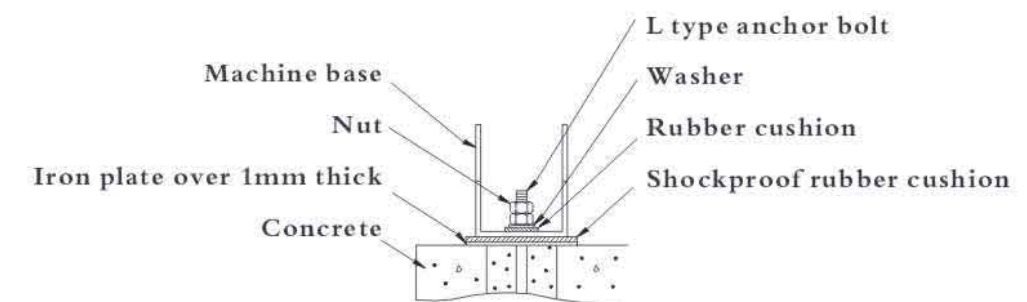
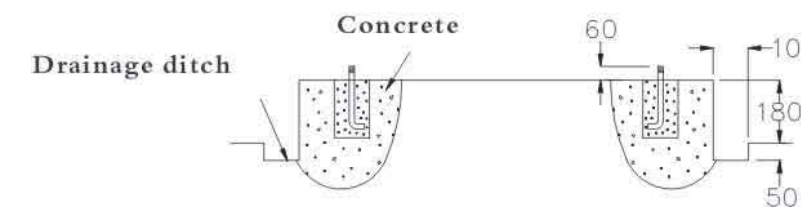
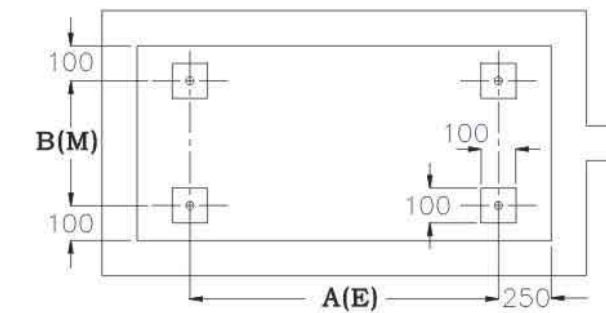


Figure-2 unit: mm



Hoisting

Prepare the hoisting plan in advance, including the installation date, dimensions, weight, carry path, preservation holes and hoisting devices, as shown in Table-1.

Item	Check weight	
Handling	Route	1. check the corridors, stair doors, and handling routes.
		2. check the roofs, undergrounds, and handling routes.
	Unloading	1. check the weight of the equipment.
		2. prepare the unloading equipment.
		3. check the storage space.
	Handling	1. the large unit that can be disassembled shall be disassembled before handling, and assembled at site.
2. if unable to be disassembled, the unit shall be handled through the openings on the wall or ground for the equipment.		
Modify routes	If necessary, the wall and floor shall be modified to facilitate the handling.	

Table-1

1.The machine hoisting shall comply with the safety regulations on building site. In hoisting, someone shall be assigned for as a hoisting guide. Warning methods shall be taken to ensure the safety of machine and persons on spot.

2.Rollers or hooks shall be used in the machine convey and hoisting. Do not direct beat and not apply rope on the weak parts such as copper pipes, valve body, and control box etc. Protection cushion shall be placed at the contact points between the machine and ropes, as shown below.

Handle with care. Avoid shaking and collision, preventing the machine and building from being damaged and the person injury.

